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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/522,385

01/26/2005

Shinya Nakaoka

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EXAMINER

LEE, GILBERT Y

ART UNIT

PAPER NUMBER

3673

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/522,385

Applicant(s)

NAKAOKA ET AL.

Examiner

Gilbert Y. Lee

Art Unit

3673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/23/07 has been entered.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kakehi et al. (US Patent No. 5,934,680).

Regarding claim 1, the Kakehi et al. reference discloses a seal ring (50) including a first seal portion (e.g. 54) sealing a side wall surface (e.g. 90) of an annular groove (Fig. 25B), the annular groove being provided in one of two members (Figs. 25A and 25B); and

a second seal portion (e.g. 55),

an annular interspace between the two members being sealed by the first and second seal portions (Col. 1, Lines 30-36),

a ring body being with a separation portion (Figs. 13A and 13B) separated in one place in a circumferential direction (Fig. 16) to include a first end part (e.g. 17 or 17') and a second end part (e.g. 17 or 17'),

said first seal portion is provided with linear contact portions (e.g. 54) which come into linear contact with the sidewall surface of the annular groove, so as to extend continuously over a whole circumference of the seal ring from one side of said separation portion to the other side thereof (Fig. 16), and

said linear contact portion which is provided on one side of said separation portion, and said linear contact portion which is provided on the other side of said separation portion being located at a distance in a radial direction of the seal ring (Fig. 16) so that an inner circumferential surface of the first end part on one side of the separation portion comes into contact with an outer circumferential surface of the second end part on the other side of the separation portion (Fig. 16) to control a quantity of leakage from a sealed fluid side to the unsealed fluid side of the shaft (Col. 4, Lines 5-7). Note that because the Kakehi et al. reference discloses the structural limitations of

claim 1, the Kakehi et al. will be able to control a quantity of leakage from a sealed fluid side to the unsealed fluid side of the shaft.

Regarding claim 2, the Kakehi et al. reference discloses a first portion of said linear contact portion being provided on one side of said separation portion and a second portion of said linear contact portion being provided on the other side of the separation portion and said first and second portions having regions which are placed one over the other when said linear contact portions are projected in the diametric direction (Fig. 16).

Regarding claim 3, the scope of the claim is a functional limitation and the Kakehi et al. reference discloses the invention substantially as claimed in claim 1, therefore it is inherent that the Kakehi et al. reference as modified would be able to function in the same manner as the applicant's invention.

Regarding claim 4, the Kakehi et al. reference discloses the linear contact portions define protruding portions protruding from a side surface of the ring body, toward the sidewall surface of the annular groove (Figs. 13A and 13B).

Regarding claim 5, the Kakehi et al. reference discloses the linear contact portion provided on one side of the separation portion being located nearer a side of the other member than the linear contact portion provided on the other side of the separation portion (Fig. 16).

Regarding claim 6, the Kakehi et al. reference discloses circularly-arcuate protrusive parts (e.g. 17) and circularly-arcuate recessed parts (e.g. recesses into which elements 17 are inserted in Fig. 16).

Regarding claim 10, the Kakehi et al. reference discloses the linear contact portions including:

a first linear contact portion (e.g. portion on left abutment 16 in Fig. 16) and a second linear contact portion (e.g. portion on right abutment 16 in Fig. 16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakehi et al. in view of Ruthenburg (US Patent No. 3,784,215)

Regarding claims 7 and 8, the Kakehi et al. reference discloses the invention substantially as claimed in claims 6 and 1, including circularly-arcuate protrusive parts (e.g. 17) and circularly-arcuate recessed parts (e.g. recesses into which elements 17 are inserted in Fig. 16).

However, the Kakehi et al. reference fails to explicitly disclose protrusions which come into linear contact with the fitting surfaces.

The Ruthenburg reference, an annular split sealing ring, discloses protrusions (e.g. 56 and 58) in linear contact with the fitting surfaces (e.g. 48).

It would have been obvious to one of ordinary skill in the art to provide protrusions to the Kakehi et al. reference in view of the teachings of the Ruthenburg

Art Unit: 3673

reference in order to provide a circumferential constraint against the opening of the split sealing ring when the ring is in a free position (Ruthenburg, Col. 1, Lines 55-59).

Regarding claim 9, the Kakehi et al. reference, as modified in claim 8, discloses the fitting surfaces being radially spaced from the axis of the sealing ring (Kakehi et al., Fig. 16).

Response to Arguments

5. Applicant's arguments filed 2/23/07 have been fully considered but they are not persuasive.

With regards to the applicant's argument of claim 1, the argument is not persuasive because the Kakehi et al. does describe the control of leakage at the separation at Col. 4, Lines 5-7.

With regards to the applicant's argument of the Kakehi et al. reference failing to disclose "the linear contact portion which is provided on one side of the separation portion, and the linear contact portion which is provided on the other side of the separation portion are located at a distance in a radial direction of the seal ring so that an inner circumferential surface of the first end part on one side of the separation portion comes into contact with an outer circumferential surface of the second end part on the other side of the separation portion in order to control a quantity of leakage from a sealed fluid side to the unsealed fluid side", the argument is not persuasive because Fig. 16 clearly shows two ends 17 and 17' with the structure as claimed.

With regards to the applicant's argument of the Ruthenberg reference, the argument is not persuasive because the Ruthenberg is never used to reject claim 1. Instead the Ruthenberg is only referenced to teach protrusions as rejected in claims 7-9.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gilbert Y. Lee whose telephone number is 571-272-5894. The examiner can normally be reached on 8:00 - 4:30, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia L. Engle can be reached on (571)272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

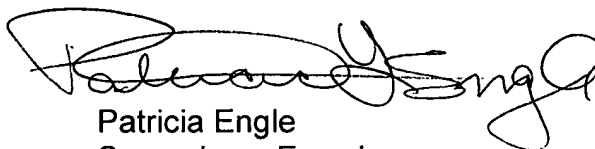
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 3673

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GL
March 16, 2007

A handwritten signature in black ink, appearing to read 'Patricia Engle', with a large, stylized loop at the end.

Patricia Engle
Supervisory Examiner
Tech. Center 3600